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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,129	07/24/2001	Mary Louise Mandich	Mandich 9-10	4928

7590 08/12/2003

Docket Administrator  
Lucent Technologies, Inc.  
Room 3J-219  
101 Crawfords Corner Road  
Holmdel, NJ 07733-3030

EXAMINER

HOFFMANN, JOHN M

ART UNIT

PAPER NUMBER

1731

DATE MAILED: 08/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/912,129	Applicant(s) MANDICH ET AL.	
	Examiner John Hoffmann	Art Unit 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 June 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10, 12-25, 28-39, 41, 42 and 44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10, 12-25 and 28-33 is/are allowed.
- 6) ☒ Claim(s) 34-39, 41, 42 and 44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other:  |

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 13 June 2003 has been entered.

***Allowable Subject Matter***

Claims 1-10 , 12-26 and 28-30 are allowed.

***Claim Rejections - 35 USC § 103***

Claims 34-39, 41-42 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhandarkar 5356447 in view of Shintani 4264347.

Bhandarkar teaches the invention as claimed except for the use of specific gas, col. 3, line 55 to col. 4, line 26. Instead, Bhandarkar discloses that some routine experimentation was performed to determine the preferred gas of eight gases considered (col. 4, line 8). It would have been obvious to perform additional routine experimentation to determine what the best gas is. At col. 7, lines 16-43, col. 2, lines 28 Shintani teaches which gases can be used to remove impurities from silica fiber preforms. And/or would have been obvious to use any of the Shintani gases for the Bhandarkar gases because it is the mere substitution of one known cleaning gas for

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another. Further it is noted that the claim gas is a homomorph of the Bhandarkar preferred gas - it just has one substituted Group VIB atom (sulfur) for another Group VIB atom (oxygen). Further, col. 4, lines 19-26 spell out what one needs for a reactant. It is inherent that the glass is treated by the gas at all temperatures from about room temperature to the final temperature - including all temperatures within the 400-800C range - therefore there is a step of ranging from 400 to 800C; the claims are comprising in nature and thus permit further ranging of temperatures higher of 800. After the temperature ranges to 800, it continues to range to higher temperatures.

In addition, it would have been obvious to determine the optimal temperature for using sulfur chloride by routine experimentation.

As to claims 42-43, see Bhandarkar, col. 2, lines 45-53 and col. 3, lines 55-67 which indicate that the molecular chlorine will reduce the particles.

Please refer to rejections of Application 09/109827 for any specific details not discussed above.

Claims 34-41 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhandarkar 5356447 in view of JP 1-164740 (hereinafter 'Kanamori') and Chandross 5240488.

Bhandarkar discloses the invention substantially as claimed, except for any non-oxygenated sulfur halide. Bhandarkar also teaches a step of dehydrating the porous body - prior to the treatment with an oxygenated sulfur halide (see col.2, lines 45-53).

For this dehydrating step, Bhandarkar gives chlorine-oxygen as an example of a dehydroxylating treatment.

Kanamori discloses that it is preferred to use  $S_2CL_2$  to dehydrate porous glass. See the English translation, page 7, line 16 and 27; page 6, lines 3-8; the sentence spanning pages 6-7; and the disclosed examples which shows  $S_2CL_2$  as having the best results. It would have been obvious to alter the Bhandarkar method by using the  $S_2CL_2$  mixed with inert gas as the dehydrating gas, for the advantages and reasons put forth by Kanamori. It is inherent that the  $S_2CL_2$  would reduce the size of the particles.

As to the temperature limitations, See the Table at cols 11-12 of Chandross: feature 12 a) discloses the preferred temperature for dehydrating is 500-1000 which is a substantial overlap with Applicant's 400-800 temperature. One of ordinary skill realizes that higher temperatures are more expensive than lower temperatures - see feature 13a) of the table. It would have been obvious to do the dehydrating at the lower end of the preferred temperature range (i.e. near 500 C) to reduce the power costs for the process.

Alternatively: col. 2, lines 45-46 of Bhandarkar disclose that the gas treatment occurs while the body is "ranging" from room temperature to whatever final temperature is used. Chandross at feature 11 a) of the TABLE of cols. 11-12 discloses that the removal of volatiles has 500 C as the upper temperature. Claim 1 of Kanamori discloses an upper temperature between 900 and 1100C. It would have been obvious to supply the  $S_2CL_2$  during the entirety of heating from end of the removal of volatiles step to the upper temperature, because it would be a waste of time to wait until later to

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start the treatment gases. Thus, as the ramping (i.e. ranging) from no more than 500 C to no less than 900C, the preform would be treated as it ranges (i.e. ramps) from 400 to 800C.

Claim 35: As the obvious combination ramps (i.e. ranges) from the starting to final temperature, it would inherently also ramp/range from 600 to 700C.

Claim 36: See Table 1, item 12b) of Chandross - it would have been obvious to perform routine experimentation to determine the optimal amount of time needed to dehydrate the preform.

Claims 37-40 and 44 are clearly met.

Claim 41: The Kanamori uses only a 2% chloride. Chandross teaches at the Table, item 12 c) 1. that one can use 1-100% of the dehydrating agent. It would have been obvious to increase the amount of  $S_2CL_2$  used - so as to increase the reaction rate, with no new or unexpected results.

Claims 34, 35, 37-39 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shintani 4264347 in view of Chandross 5240488 and the Prior Art Teaching on Page 3 of the present specification (hereinafter referred to as "PAT").

Shintani disclose the treatment of fiber preforms using non-oxygenated halides (col. 7, lines 25-27). However Shintani does not disclose using sol gel processing. Chandross teaches that one can make fiber "far less costly" by using sol gel processes (col.1, lines 10-11, col. 2, lines 20-68). It would have been obvious to change the

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Shintani method by making the tube by the Chandross sol gel process - for the low cost of doing so. There is no disclosure of refractory metal oxide particles.

The PAT states, that the refractory metal oxide particles are "typically unavoidable in a sol-gel process". Therefore, it would have been obvious to expect that there would be refractory metal oxide particles in the Shintani-Chandross tube.

As to the temperature. See col. 8, lines 1-8 which disclose the heating of the entire body. It would have been obvious to perform routine experimentation to determine what temperature is "sufficient to surface-treat". Alternatively, col. 9, line 9 discloses heating to 1500C. It would have been obvious that the temperature ranged from 400 to 800 prior to in ranged all the way up to 1500C. One cannot heat/range from room temperature to 1500 C without ranging all temperatures in between.

As to the reducing size or concentration of the particles. It is deemed since the prior art would do the same thing as Applicant, the same result would occur

Claim 35 is met because the temperature would have to range from 600 to 700C. The remaining claims are clearly met.

### ***Response to Arguments***

Applicant's arguments filed 06-13-2003 have been fully considered but they are not persuasive.

It is argued there is no prior art suggestion to use the Shintani treating agent. The motivation is to find the best treating agent. Bhandarkar discloses the agent choice is important and leaves open the possibility of better agents.

Examiner disagrees with the conclusion that the rejection is based on an obvious to try rationale.

IT is argued that that Kanamori performs outside the recited temperature range 400-800C. The claim does not use the language of the argument. The claim requires that the temperature has to "range from" 400 to 800, i.e. it has to be heated from 400 to 800. There is no requirement that "the temperature" of the tube is remains no higher than 800 nor that any of the treatment must occur while the temperature is being ranged from 400 to 800. Examiner is reluctant to interpret the claims as requiring a specific temperature, for concerns that a potential infringer could avoid the claims simply by changing a temperature during the middle of the process. If the claims are amended to remove the verb "ranging" and recite heating to a temperature within the range, then that would be considered.

The arguments address the rejection sentence by sentence. The rejection is the totality of the sentences. Any given sentence by itself may be insufficient to support a conclusion of obviousness, but rejection is the totality of the sentences.

AS to the argument that Kanamori and Bhandarkar do not suggest removing oxide particles it would be inherent that the particles would be removed, because the method would do the same thing that applicant does.

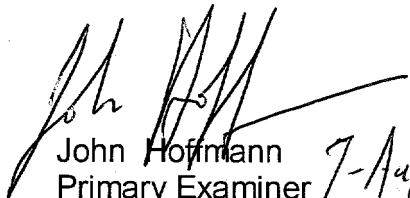


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is 703-308-0469. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 703-308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-372-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

  
John Hoffmann  
Primary Examiner  
Art Unit 1731  
7-Aug-2003

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August 7, 2003